

Abstract of the Disclosure

Provided is a dye-sensitized solar cell including liquid-type imidazolium material, which is liquid at a room temperature to a high temperature, as electrolyte. The dye-sensitized solar cell includes a semiconductor electrode; a confronting electrode; and electrolyte of 1,3-vinylalkylimidazolium iodide family being inserted between the semiconductor electrode and the confronting electrode. Since the solar cell of the present research uses 1,3-vinylalkylimidazolium iodide instead of iodine-family oxidation and reduction electrolyte including organic solvent easily volatilized at a high temperature. Thus, the solar cell can have excellent thermal stability and temperature stability as well as high energy conversion efficiency.